

NOTES ON THE GENUS *CYBIANTHUS* SUBGENUS *CYBIANTHUS* (MYRSINACEAE) IN COLOMBIAN AMAZONIA

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ABSTRACT

Studies of Myrsinaceae in Colombian Amazonia have revealed two new species in the genus *Cybianthus* subgenus *Cybianthus*: *C. barbosae* Pipoly and *C. rufo-ramulus* Pipoly. They are described and illustrated herein, and their phylogenetic relationships are discussed.

RESUMEN

Al estudiar las *Myrsinaceae* de la amazonía colombiana, se descubrieron dos especies nuevas, pertenecientes al género *Cybianthus* subgénero *Cybianthus*. Se describen *Cybianthus barbosae* Pipoly y *C. rufo-ramulus* Pipoly, así mismo se ilustran y se discute su parentesco.

The genus *Cybianthus* Martius contains ten subgenera and perhaps 150 species (Pipoly 1987, 1991, 1992). Subgenus *Cybianthus* contains approximately 52 species, including 7 Peruvian ones as yet undescribed. The subgenus is distributed in the Andes from Colombia to Bolivia, thence eastward through the Guayana Floristic Province (sensu Maguire 1979) to French Guiana and south-eastward through Amazonia to southeastern Brazil. The subgenus is defined by a vestigial pistillode in staminate flowers, basifixed anthers as wide or wider than long, and a staminal tube which is developmentally fused to the corolla tube; the stamens thus appearing epipetalous.

During phytodiversity studies in the Amazon Basin of Colombia, concomitant with floristic and monographic studies of the genus *Cybianthus* for *Flora Neotropica* and *Flora de Colombia*, I have encountered the following new species, described herewith.

Cybianthus barbosae Pipoly, sp. nov. (Fig. 1)

Propter ramulos angulatos rufo-stellato-tomentosos, folia pseudovercillata, lobos calycinos late ovatos vel suborbiculares ad apicem rotundatos vel truncatos, antheras latiores quam longiores ad apicem obtusas vel truncatas *C. venezuelanum* arcte affinis, sed ab eo ramulis dense rufo-stellato-tomentosis et glanduloso-lepidotis (non solum rufo-stellato-tomentosis), laminis membranaceis (non chartaceis), petiolis marginatis aliquantum pulvinatis (non canaliculatis attenuatis) 0.5–1 (nec 1.5–2.5) cm longis, calyce chartaceo (non carnosus) 1.2–1.4 (nec 0.9–1.1) mm longo, corolla chartacea (non carnosus) 1.8–2.5 (nec 1.6–1.8) mm longa, corollae tubo

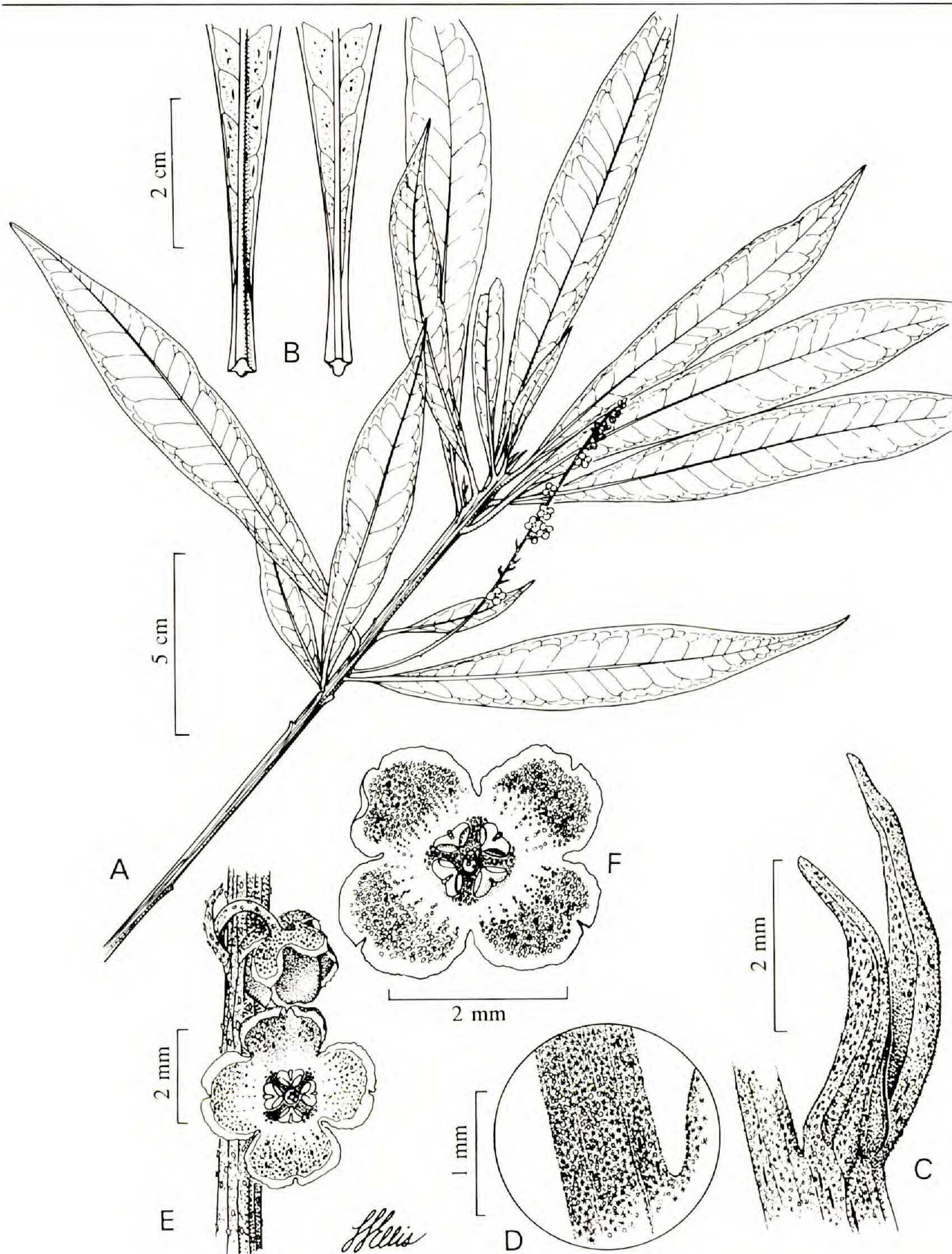


FIG. 1. *Cybianthus barbosa* Pipoly. A. Habit. B. Adaxial and abaxial leaf bases, showing marginate, pulvinate petiole, punctations and decurrent leaf base. C. Branchlet apex, showing tomentum. D. Branchlet close-up, showing stellate tomentum and translucent glandular-lepidote scales. E. Portion of inflorescence, showing floral habit, linear floral bracts, cylindrical pedicels, hyaline calyx lobe margins, and notched apex of corolla lobes. F. Staminate flower, showing glandular granules on corolla tube and lobes, quadrate corolla tube, and prominent ventral punctations on anther connectives. A–F. drawn from holotype.

quadrato (nec tereti), lobis corollinis depresso-ovatis (nec late triangularibus), denique antheris late triangularibus (non quadratis) statim separabilis.

Shrub or small tree to 2 m tall; growth following Rauh's architectural model. Branchlets angulate, 3–4 mm diam., with prominent, narrow longitudinal ridges, densely rufous-stellate and translucently glandular-lepidote, the tomentum persistent. Leaves pseudovercillate; leaf blades membranaceous, linear-lanceolate, very narrowly oblanceolate or rarely oblong, (10–)15–22(–27) cm long, 2–3.5 cm wide, apex long-attenuate or acuminate, the acumen 1.5–2.5 cm long, base long attenuate and cuneate, decurrent on the petiole, the blade bullate when fresh, subbullate when dry, nitid, minutely and sparsely orange-punctate above, below densely pellucid-punctate, sparsely black-punctate-lineate and with scattered stellate trichomes below, venation brochidodromous, costa slightly raised above, prominently raised below; secondary veins 18–24 pairs, deeply impressed above, prominently raised below, the margin irregular, undulating, flat; petioles marginate, 0.5–1 cm long, sparsely stellate above, densely stellate below, slightly pulvinate at base, glabrescent. Staminate inflorescence a simple, erect raceme 8–11 cm long at maturity, the rachis and pedicels densely rufous-glandular-granulose and rufous-stellate-puberulent; inflorescence bract unknown; floral bracts membranaceous, linear, (1.5–)2–2.4 mm long, 0.2–0.3 mm wide, equal to or longer than the pedicel, apex subulate, glabrous above, densely stellate below, carinate, the margin entire, with scattered stellate hairs; pedicel cylindrical, thin, (1.5–)2–2.3 mm long, densely glandular-granulose and with a few scattered stellate hairs, glabrescent. Flowers chartaceous, 4-merous, green, pendent at maturity; calyx 1.2–1.4 mm long, deeply divided, tube 0.3–0.4 mm long, lobes very widely obovate to suborbicular, symmetric, 0.9–1.1 mm long, 0.8–1.1 mm wide, translucent, apex broadly rounded to truncate, thickened medially, densely and prominently orange-punctate, abruptly constricted basally, the margin white to hyaline, irregularly erose, sparsely glandular-ciliate; corolla subrotate, 1.8–2.5 mm long, translucent, the tube quadrate in cross-section, 1–1.1 mm long, densely rufous-glandular-granulose and rugose without, especially on the surface alternate with the calyx lobes, densely translucent-glandular-granulose within on surface alternate with anthers, the lobes depressed-ovate, 0.8–1.4 mm long, 1.8–2.2 mm wide, apex very broadly rounded to truncate, with at least one apical notch, densely and prominently orange-punctate and rufous-glandular-granulose without, densely translucent glandular-granulose within except near base; anthers widely triangular, apparently sessile and epipetalous (the staminal tube not easily discernible from corolla tube), 0.4–0.6 mm long, 0.8–1 mm wide, apex obtuse, base truncate, appearing truncate at anthesis, birimose, dehiscent by large terminal pores opening into wide longitudinal slits for ca. $\frac{3}{4}$ anther length, connective adnate to corolla tube adaxially, densely red-punctate abaxially; pistillode conic, 0.3–0.6 mm long, 0.2–0.4 mm diam.,

terete, hollow, apex translucent-glandular-granulose. Pistillate inflorescence unknown. Fruit unknown.

TYPE: COLOMBIA. AMAZONAS. Municipio de Leticia: Parque Nacional Natural Amacayacu, Quebrada Agua Pudre, ca. 1.5 km NE of Quebrada mouth at río Amacayacu, permanent 25-hectare plot, 03°47'S, 70°15'W, 200–220 m, 18 Nov 1991 (stam. fl), *J. Pipoly et al.* 16450 (HOLOTYPE: COL; ISOTYPES: BRIT, MO, K, TEX, US).

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Distribution, ecology and conservation status: *Cybianthus barbosa* grows in tall wet forest on lateritic soils and is presumably endemic to the Leticia area. The canopy of the forest in which it occurs is approximately 35 m in height, and the dominants include *Virola*, *Osteophloem* and *Iryanthera* (Myristicaceae), *Eschweilera* (Lecythidaceae), *Licania* (Chrysobalanaceae), and *Parkia* (Mimosaceae). *Cybianthus barbosa* grows specifically along small streambanks on rotten logs, at 200–220 m elevation. In the area of a quantitative inventory in the park, I observed six individuals of *C. barbosa* per hectare, a relatively high frequency for a species of Myrsinaceae.

Etymology: This species is dedicated to César Eduardo Barbosa Castillo, Director of the Herbarium, Unidad Investigativa Federico Menem (FMB), Ministry of Environment, Colombia. César Barbosa is a specialist in *Pithecellobium* and Rhizophoraceae of Colombia, and a keen student of the Amazonian flora. He first spotted *Cybianthus barbosa* growing next to a 40 meter tree of *Sterigmaphetalum* (Rhizophoraceae) sp. nov.

Widely ovate or suborbicular calyx lobes, rounded or truncate apically, anthers as wide as long and obtuse or truncate at apex, and rufous-stellate-tomentose, angulate branchlets indicate that *Cybianthus barbosa* is most closely related to *C. venezuelanus*, a taxon dispersed from Guyana west through Amazonian Brazil and Venezuela to Colombia, thence south through the Andes to Peru. The widely triangular anthers, quadrate corolla tube, glandular granules interspersed with rufous stellate hairs on the branches, marginate and somewhat pulvinate petioles, and the chartaceous and longer perianth, immediately separate *C. barbose* from *C. venezuelanus*.

Cybianthus rufo-ramulus Pipoly, sp. nov. (Fig. 2)

Ob folia late oblanceolata, flores subsessiles, antheras sessiles subdeltatas, calycis corollaeque lobos latiores quam longiores *C. minutiflorum* simulans, sed ab eo laminis chartaceis (non membranaceis) rufo-hirtello-(nec stellato-) tomentosis, petiolis 1.7–2 (non 2–3) cm longis, perianthio chartaceo marronino-viridi (non carnosio flavido), denique antheris subdeltatis (non obcordatis) glabris (nec citreo-glanduloso-granulosis) facile cognoscitur.

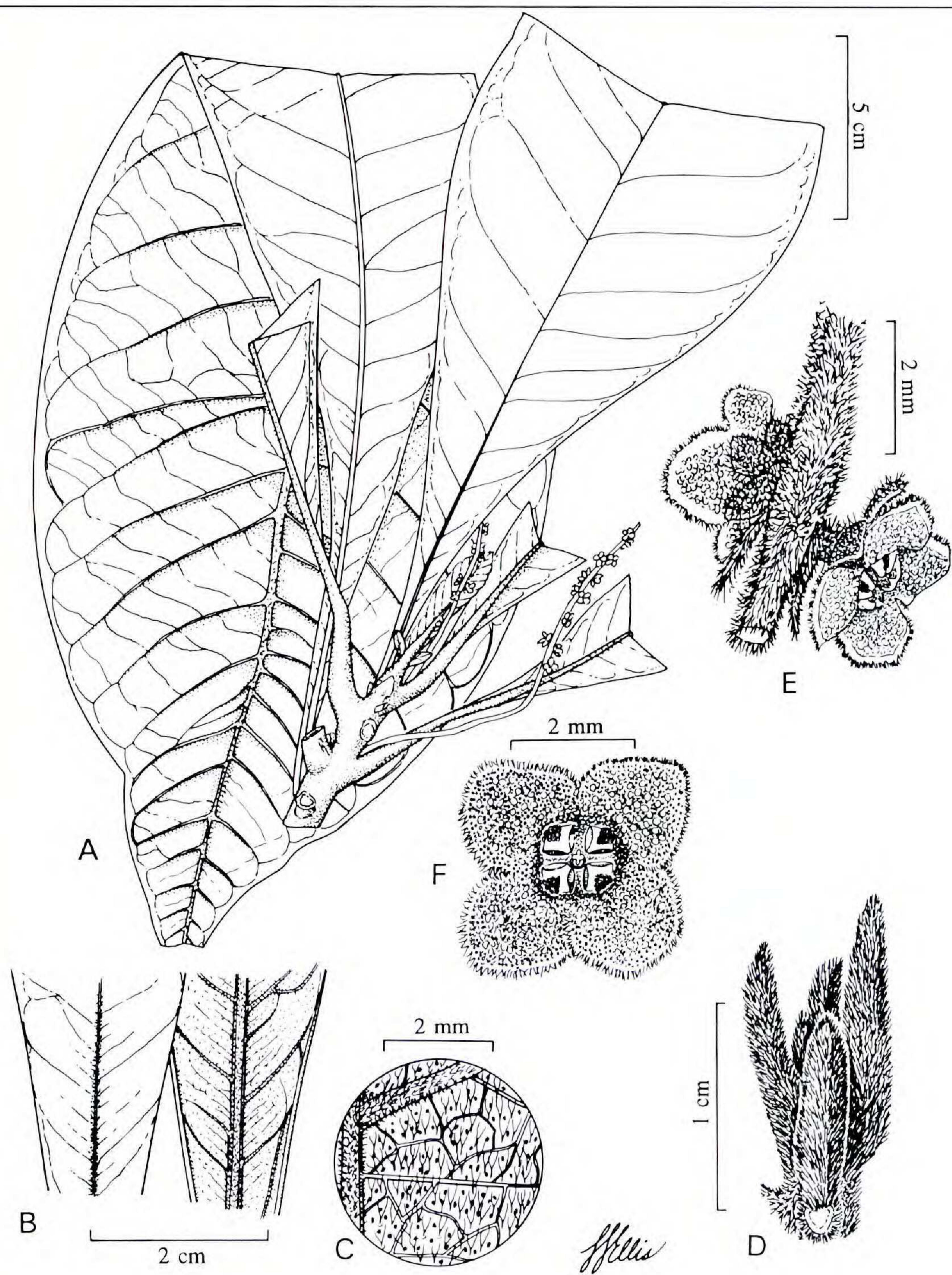


FIG. 2. *Cybianthus rufo-ramulus* Pipoly. A. Habit, showing terete branchlets. B. Adaxial and abaxial leaf bases, showing hirtellous tomentum. C. Abaxial leaf surface, showing biramose hirtellous trichomes. D. Branchlet apex, showing hirtellous tomentum. E. Portion of staminate inflorescence rachis, showing subsessile flowers, tomentum, prominent punctations that appear verrucose and hyaline, and tomentose margins.

Tree to 8 m tall; growth following Rauh's architectural model; all vegetative portions densely rufous hirtellous-tomentose, the trichomes biramose, branched just above base (Y-shaped), stiff, persistent. Branchlets terete, 8–10 mm diam. Leaves alternate; leaf blades chartaceous, oblanceolate, (34–)38–46(–52) cm long, (9–)11–13(–16) cm wide, apex acute to short-acuminate, the acumens 0.3–0.5 cm, base long-attenuate and cuneate, decurrent on the petiole, subbullate, sordid above, pallid below, densely prominently and minutely black punctate above and below, more densely tomentose along the costa and veins below, venation brochidodromous, the costa impressed and hirtellous-tomentose above, prominently raised and densely hirtellous-tomentose below, secondary veins (15–)20–24 pairs, deeply impressed above, prominently raised below, the margin entire, flat; petiole deeply canaliculate, pulvinate, 2–3 cm long, densely tomentose, persistent. Staminate inflorescence a simple, erect raceme 8–10 cm long, the rachis, pedicels, and calyx densely tomentose; inflorescence bract unknown; floral bracts linear, 1.3–1.5 mm long, 0.2–0.3 mm wide, apex subulate, hyaline, densely long-hirsute abaxially, glabrous adaxially, margin entire; pedicel cylindrical, 0.4–0.6 mm long, densely tomentose, persistent. Flowers chartaceous, 4-merous, greenish-maroon, translucent, pendent at maturity; calyx cotyliform, deeply divided, 1.1–1.4 mm long, tube 0.2–0.3 mm long, lobes widely ovate to suborbicular, 0.9–1.1 mm long, 0.7–0.9 mm wide, apex obtuse, densely and prominently red punctate, the punctations crowded and appearing verrucose throughout except at scarious margin, tomentellous alternating with the calyx lobes, margin irregular, entire, bifid-hirtellous; corolla subrotate, 1.3–1.7 mm long, the tube 0.3–0.5 mm long, the lobes depressed-ovate 0.9–1.2 mm long, 1.3–1.5 mm wide, apex broadly rounded, not notched, densely and prominently red-punctate and appearing verrucose and tomentose on areas between calyx lobes abaxially, densely glandular-granulose throughout within, the margin entire, hyaline, tomentose; anthers subsessile, subdeltate, 0.3–0.4 mm long, 0.4–0.5 mm wide, apex acute, base truncate, apically dehiscent by pores, the pores not biramose, opening ca. $\frac{3}{4}$ anther length, the connective densely and prominently punctate dorsally; pistillode lageniform to obturbinate, 0.5–0.7 mm long, 0.1–0.2 mm, glabrous, style short, stigma subcapitate. Pistillate inflorescence: like the staminate but 6–9 cm long. Fruit sessile, calyx 1.3–1.5 mm long, the tube ca. 0.1 mm long, the lobes widely ovate, 1.2–1.3 mm long, 0.7–0.9 mm wide, apex obtuse, margin as in staminate. Fruit globose, 8–10 mm diam., orange, then purple, then black at maturity, rugose, inconspicuously black-punctate, exocarp thick, juicy.

TYPE: COLOMBIA. AMAZONAS: along río Yará, near mouth of Quebrada El Mochilero, ca. 00°30'N, 72°53'W, 120–200 m, 23 Apr 1986 (stam. fl), *G. Galeano, J. H. Torres, J. Huitoto, & B. Plazas 1105* (HOLOTYPE: COL). Fig. 2.

PARATYPES: COLOMBIA. AMAZONAS: Quebrada Aduche, 200 m, 5 Aug 1977 (fr), *J. M. Idrobo 8908* (COL). BRAZIL. ACRE: Estrada Alemanha, Cruzeiro do Sul, 14 Apr 1971 (fr), *G.*

Prance et al. 11908 (IAN, INPA, K, MG, NY); 6 May 1971 (fr), *P. Maas et al.* P12737 (F, IAN, INPA, K, NY).

Distribution, ecology and conservation status: *Cybianthus rufo-ramulus* is known from *terra firme* forests, near 200 m, in Amazonas, Colombia and Acre, Brazil. According to one collector (Galeano, pers. comm.), it grows along small brooks and other minor watercourses in primary forests, and may be considered an indicator of environmental quality.

Etymology: The specific epithet describes the rufous tomentum of the branchlets, composed of forked trichomes unique within the genus.

Cybianthus rufo-ramulus appears to be closely related to *C. minutiflorus*, a poorly known taxon from the rim of the Amazon Basin in Peru, but is easily recognized by the biramose-hirtellous tomentum of the branchlets, leaves and inflorescence, the shorter petioles, the chartaceous, greenish-maroon perianth, and the subdeltate, glabrous anthers. The tomentum of Y-shaped hairs (Fig. 2C) is the first of its kind reported for the genus and should not be confused with the malpighiaceae trichomes unique in *Cybianthus* to subgenus *Triadophora*.

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